Storm logs:

Norwegian S. S. *Modig*, Androssan, Scotland, to Portland, Me.:

Gale began on the 15th, wind W. Lowest barometer 29.19 inches at 3 p. m. on the 16th, wind WSW., 11, in 53° 27′ N., 25° 56′ W. End on the 17th, wind WNW. Highest force of wind 12; shifts 8 points.

Danish S. S. *United States*, New York to Kristianssand:

Gale began on the 15th, wind S. Lowest barometer 28.89 inches at 4 a. m. on the 16th, wind WSW., in 56° 14′ N., 24° 15′ W. End on the 19th, wind W. Highest force of wind 10; shifts S. to WSW.

American S. S. *Wildwood*, Aberdeen to Pensacola:

Gale began on the 16th, wind W. Lowest barometer 28.70 inches at 4 p. m. on the 17th, wind W., 9, in 60° N., 9° 30′ W. End on the 18th, wind W. Highest force of wind 9, W.; shifts SSW.–W.–NNW.

Off the south coast of Ireland on the 20th there was a LOW of limited extent, with northwesterly gales in the western quadrants, and southerly in the eastern, as shown by Chart XII.

Storm log:

Dutch S. S. *Veendam*, Rotterdam to New York:

Gale began on the 20th, wind SW. Lowest barometer 29.00 inches at 8 a. m. on the 20th, wind NW., 9, in 49° 50′ N., 17° 44′ W. End on the 20th, wind WNW. Highest force of wind 9, NW.; shifts SW.–NW.

This disturbance moved but little during the next four days, and was intermittent in character, as the force of the wind had decreased by the 21st, only to increase again on the 22d; westerly and northwesterly gales continued until the 24th over the region between the 25th meridian and European coast.

Storm logs:

British S. S. *Masconomo*, Norfolk to Hamburg:

Gale began on the 22d, wind WSW. Lowest barometer 29.71 inches at 7 a. m. on the 22d, wind WSW., in 48° 33′ N., 20° 40′ W. End on the 23d, wind N. Highest force of wind 11, WSW; shifts WSW.–NNW.–NW.

British S. S. *Minnetonka*, Cherbourg to New York:

Gale began on the 22d, wind SSW. Lowest barometer 29.23 inches at 3:50 p. m. on the 22d, wind SW., in 49° 49′ N., 12° W. End on the 24th, wind NW. Highest force of wind 10; shifts SSW.–SW.

From the 24th to the 27th there was an area of low pressure over the region between Newfoundland and the 40th meridian, where a few vessels reported winds of moderate gale force.

From the 28th to 30th the last tropical disturbance of the month, as described elsewhere, moved from the south coast of Cuba on the former date to the vicinity of Hatteras on the latter.

On the 29th northerly winds, force 7, were reported from vessels in the western part of the Gulf of Mexico, and southerly winds, force 8, from off the coast near Nantucket on the 30th.

On the 26th there was a LOW central about 10 degrees east of St. Johns, Newfoundland, that moved slowly northeastward, and on the 27th was near 52° N., 40° W.

Storm log:

Swedish S. S. *Stockholm*, New York to Gothenburg:

Gale began on the 26th, wind NW. Lowest barometer 29.97 inches at noon on the 26th, wind NW., 8, in 48° 04′ N., 50° 32′ W. End on the 27th, wind N. Highest force of wind 8; shifts NW.–NNW.

From the 28th until the 30th there was another disturbance over the region between the 30th meridian and European coast that reached its greatest intensity on the 29th.

Storm log:

British S. S. *Verbania*, New York to London:

Gale began on the 29th, wind W. Lowest barometer 29.66 inches at 6 a. m. on the 29th, wind W., 8, in 48° 55′ N., 25° 20′ W. End on the 29th. Highest force of wind 8, NW.; shifts W.–NW.

551.506 (265.2)

NORTH PACIFIC OCEAN

By WILLIS EDWIN HURD

The change from summer to early autumn conditions, although gradual, was none the less decided. Depressions of the temperate regions appeared over somewhat lower latitudes than in August, and the Aleutian cyclone became restored to its place over the northern sailing routes. As a consequence, although the weather continued generally fine, gales in middle and higher latitude became more frequent and cloudiness and rains were common over the northern reaches of the North Pacific. Fog, however, became less prevalent. It was observed on several days both east and west of the 180th meridian, but only along the American coast between the 30th and 50th parallels did it approximate the frequency of its occurrence in August. Between San Francisco and San Diego fog was reported by steamships on 16 days of the month.

The general pressure distribution over the ocean for September showed the great anticyclone of middle latitudes, central near 35° N., 145° W., continuing as a stable condition, but becoming somewhat more disturbed by cyclonic movements with the advance of the season. In the neighborhood of Midway Island two cyclones, one on the 12th and 13th, the other on the 19th and 20th, cut into the high-pressure area from the west. On the north the Aleutian LOW, encroaching southward, distorted the HIGH on several occasions. On the east, while no depression came in from the Hawaiian region, yet low pressure spread westward from the United States on the 11th and 12th and in conjunction with the Gulf of Alaska LOW, covered the whole ocean east of 140° west longitude. Anticyclones entered the United States from the oceanic HIGH on the 1st, 3d, 8th, 16th, 20th, and 25th.

The average pressure at Dutch Harbor, based on p. m. observations, was 29.71, or 0.04 inch below normal. The highest reading, 30.54, was recorded on the 19th and 20th; the lowest, 28.96, on the 25th. At Midway Island pressure was slightly above normal, the average being 30.03 inches, as compared with a normal of 30.01. The highest reading, 30.14, was recorded on the 27th; the lowest, 29.78, on the 18th and 19th. At Honolulu also pressure was above normal, the departure there being relatively greater than at either of the other island stations, +0.05 inch. The average of the p. m. observations was 30.03 inches. September was the second month in succession when pressure at Honolulu did not on any day register below normal at the time of the p. m. observation. The highest pressure, 30.14, occurred on the 5th; the lowest, 29.92, on the 17th.

Frequent rains fell over the northern part of the ocean and along the California-Panama route. In the latter region there seems to have been an unusual amount of precipitation. But at Honolulu the month is mentioned as the third driest September on record, with a total of only 0.34 inch of rain.

At Honolulu, quoting from the observer, "the most important feature of the month was the very small change in average temperature from day to day. The daily change for September averaged only 0.5°, which

is the smallest of any month of record with the exception of July, 1907, when the average was 0.4°." The prevailing wind was from the east, and the maximum velocity was at the rate of 28 miles an hour from the NE. on the 28th.

Vessels at sea reported gales off the west coast of Mexico on the 6th, 7th, and 9th, accompanied in each case by a slight to moderate depression of the barometer and a slight wind shift. On September 6 the American S. S. *Venezuela*, in 20° 50′ N., 107° W., encountered a SE. gale, force 9, pressure 29.87. The American S. S. *Edward Luckenbach*, San Pedro to Panama, experienced a gale from SSE., force 8, in 22° 48′ N., 109° 52′ W., on the 7th. The pressure dropped to 29.64 inches, and on the following day rose to 29.84. On the 9th her observed pressure fell to 29.79 in the course of an east gale, force 8, in 18° 05′ N., 103° 07′ W. In each instance the gale was experienced for about 10 hours.

In connection with these data it is interesting to present herewith two reports for which the Weather Bureau is indebted to Prof. P. Vasquez Schiaffino, chief of the Observatory of Mazatlan. The first of these deals with the tropical storm of September 2–8, which is considered to have originated near 10° N., 98° W., and to have died out near 27° N., 117½° W. The report follows:

The path of this cyclone is similar to that of October 29–November 2, 1920, but the storm was less intense. In 1920 the path recurved to northeast approximately at latitude 25° N., entering the United States in the vicinity of San Diego.

This is the path most frequently followed by cyclones on the western coast of Mexico.

The highest wind velocities are always recorded in the ports to the south of Cape Corrientes when the path takes the present direction, but the swell produced by the storm is very heavy and endangers navigation as far as to the north of Guaymas.

This cyclone produced violent winds from the southeast at Acapulco, Manzanillo, and Maria Madre Island, and strong winds from the same direction at San Blas, Mazatlan, and La Paz, but in none of these ports was there recorded any considerable damage.

The steamer *Chiapas* was overtaken by the storm shortly after its departure from Manzanillo for Mazatlan; it arrived at the latter port on the morning of September 6 after having had to lie off port for 48 hours on account of the heavy swell which prevented entrance to the anchoring ground.

The gunboat *Canonero*, however, was able to anchor at Mazatlan.

Professor Schiaffino's second report, relating to the storm which originated on the 6th near 10° N., 102½° W. and entered the coast between Acapulco and Mazanillo on the 9th, where it was experienced by the *Edward Luckenbach*, is here quoted:

This cyclone followed a somewhat unusual path, since it is very rare for a cyclone from the Pacific to cross the Mexican Republic as this one did. The cyclones that have previously passed to the Gulf of Mexico have crossed the Isthmus of Tehuantepec, but never to the west of the 100th meridian.

Generally, when the direction of the path is like that of the present storm, from southwest to northeast, the cyclone disappears on reaching the land and encountering the foothills of the Sierra Madre and only causes heavy rains and strong winds over a limited area.

This storm gave torrential rains from Acapulco to Mazatlan and copious rains over the greater part of the Mexican Republic. At Acapulco the depth of rainfall was more than 300 mm. (11.80 inches) in 54 hours. At this port the wind attained violent velocities, shifting from northeast to southeast, south, and west. At Mazatlan the wind blew strongly from northwest, shifting to west, and southwest.

On passing to the Gulf of Mexico the storm produced heavy rains and strong winds on the coasts of the States of Tamaulipas and Vera Cruz.

No damage to shipping was reported on the Pacific coast. On the railway in the State of Colima there were numerous washouts due to heavy rains.

Of the two depressions occurring west of Midway Island, that of the 19th is the only one known to have produced gale winds. The American S. S. *Dickenson* reported this, recording a steady south wind for some hours, highest force 8, lowest pressure 29.64, in 28° 20′ N., 176° 10′ W.

At this writing (October 31) the report of typhoons for September has not been received from the Philippine Weather Bureau, but our information points to at least two typhoons in the waters of the Far East. The first seems to have originated west-northwest of Guam on the 1st or 2d and to have moved northwest to the China coast, which it entered on the 7th (local time).

The American S. S. *West Faralon*, Hongkong to San Francisco, came under its influence on the 5th and 6th and changed her course to avoid the approaching center. She was in 27° 30′ N., 123° 40′ E., early on the 6th when her barometer read the lowest, 29.52. The highest wind force was 8, shifting from N. through E. to SE.

The second typhoon affected Japan from the 12th to the 16th. Many parts of the Empire were flooded, owing to the heavy rains. In Tokyo alone 40,000 houses were said to have been partly submerged. A number of casualties resulted from wind and water. In this severe storm the American S. S. *President Lincoln*, Shanghai to Kobe, reported a gale from NE. by E. force 11, in 32° 34′ N., 126° 55′ E. on the 14th. She also encountered a whole NE. gale during much of the 15th, on which date at G. M. N. she was in 32° 59′ N., 127° 21′ E. Her lowest observed pressure was only 29.49 inches. During the 15th and 16th the American S. S. *Wheatland Montana* experienced strong NE. winds in the Japan Sea.

While gales increased in frequency over the northern half of the ocean—and they were reported on 21 days of the month—few of them rose to a strength exceeding force 9. Of these few a WNW. gale, force 10, was observed on the afternoon of the 11th by the American S. S. *Java Arrow*, pressure 29.37, in 46° 17′ N., 149° 09′ W., during a surge of the Aleutian cyclone into the Gulf of Alaska. A westerly gale, force 10, was observed by the American S. S. *President Jackson* on the 24th, in 49° 49′ N., 172° 07′ W., lowest pressure 28.93. This occurred while the Aleutian LOW was at its most intense stage for September, and on this day the lowest observed pressure of the month, 28.64, was recorded at St. Paul, in Bering Sea.

On September 30 three centers of activity lay over the northern part of the ocean east of 180°. One covered a good part of Alaska and Bering Sea, another was central south of Dutch Harbor, and a third was moving into the eastern part of the Gulf of Alaska. The last two caused gales in their respective areas, but the more western, although not especially deep, gave the highest wind force noted outside of the typhoon area. This was recorded by the American S. S. *West Nilus*—N. 11, lowest pressure 29.38—in 44° 16′ N., 170° 41′ W.

CYCLONIC DISTURBANCES IN SOUTHERN OCEANS

By ALBERT J. MCCURDY, Jr.

South Pacific Ocean.—Weather reports thus far received from vessels traversing the shipping routes of the South Pacific Ocean in September, 1924, indicate only two disturbances of any consequence.

The first, a northwesterly gale accompanied by high seas, was experienced on the 6th and 7th by the British S. S. *Corinthic*, Capt. Frank Hart, Wellington to Montevideo, while rounding Cape Horn. Mr. F. G. Rogers, fifth officer, reports that the lowest pressure observed